

Elective modules

Module number	Module name	1 st semester	2 nd semester	3 rd semester	Credits
		Lecture (Lecturer) (L/E/Se/La/P)	Lecture (Lecturer) (L/E/Se/La/P)	Lecture (Lecturer) (L/E/Se/La/P)	
NES-30 GLC-14.1	German Language and Culture	German Language and Culture TUDIAS (0/0/0/4/0)			4
NES-INF-DSE-20-M-SE1	Foundations of Systems Engineering	Systems Engineering 1 (Fetzer) (2/2/0/0/0)			5
NES-12 09 01-14.1	Stochastic Signals and Systems	Stochastic Signals and Systems (Jorswieck) (2/2/0/0/0)			6
NES-22-E-NNMHA	Neural Networks and Memristive Hardware Accelerators	Neural Networks and Memristive Hardware Accelerators (Schroedter) (2/0/0/0/0) 2 project			7
NES-E-ResM-23	Resource Management		Ressource Management (Prof. Günther) (2/0/0/0/0) 2 project		5
NES-E-LSer-23	Requirements and methodologies for design of integrated circuits from industrial production perspective		Requirements and methodologies for design of integrated circuits from industrial production perspective (Schulz) (4/0/0/0/0)		5
NES-13 14 01-14.1	Nanotechnology and Material Science		Nanostructured Materials (Cuniberti) (2/2/0/0/2) Nanotechnology (Eng) (2/0/0/0/0)		12
NES-12 10 05-20.1	Antennas and Radar Systems		Antennas and Radar Systems (Prof. Plettemeier) (4/2/0/0/0)		7
NES-12 10 02-14.1	Communications		Communications (Fettweis) (2/1/0/0/0)		3
NES-INF-DSE-20-E-SFT	Foundations of Software-Fault Tolerance		Software Fault Tolerance (Fetzer) (2/2/0/0/0)		6
NES-11 06 04-14.1	Wireless Sensor Networks		Wireless Sensor Networks (Dargie)(2/0/2/0/0)		6
NES-DSE-14-E14	Embedded Hardware Systems Design		Embedded Hardware Systems Design (Kumar) (2/2/0/0/0)		6
NES-12 08 06	Neuromorphic VLSI Systems		Neuromorphic VLSI Systems (Mayr) (4/2/0/0/0)		7
NES-12 08 07	VLSI Processor Design		VLSI Processor Design (Mayr) (2/2/0/0/2)		7
NES-11 20 19	Design and Programming of Embedded Multicore Architectures		Design and Programming of Embedded Multicore Architectures (Göhringer) (2/2/0/0/0)		6
NES-E-DNNH-23	Deep Neural Network Hardware		Deep Neural Network Hardware (Mayr) (2/2/0/0/0)		5
NES-E-PD-23	Physical Design		Physical Design (Fettweis) (2/0/0/0/1)		6
NES-12 10 08	Introduction to Optical Nonclassical Computing: Concepts and Devices		Introduction to Optical Nonclassical Computing: Concepts and Devices (Jamshidi) (4/2/0/0/0)		7
NES-12 06 01-14.1	Materials for the 3D System Integration		3D System Integration and 3D Technologies (Panchenko) (2/0/0/0/0)	Micro-/Nanomaterials and Reliability Aspects (Panchenko) (2/0/0/0/1)	7
NES-12 12 03-14.1	Memory Technology		Memory Technology 1 (Mikolajick) (2/0/1/0/0)	Memory Technology 2 (Mikolajick) (2/0/1/0/0)	7
NES-ET-22-E-ICAND	Innovative Concepts for Active Nanoelectronic Devices			Materials for Nanotechnology (Richter) (2/0/0/0/1) Innovative Semiconductor Devices (Mikolajick) (2/1/0/0/0)	7
NES-13 14 02-14.1	Molecular Electronics			Molecular Electronics (Cuniberti/Moresco) (2/2/0/0/0)	6
NES-12 12 05-14.1	Optoelectronics			Optoelectronic Devices and Systems (Lakner) (2/1/0/0/0) Nanooptics (Eng) (2/0/0/0/0)	7
NES-ET-E-PlaTe	Plasma Technology			Plasma Technology (Hauff, Hinz) (4/2/0/0/0) Semiconductor Quantum Structures (Helm) (2/0/0/0/0)	7
NES-02 04 01	Quantum Mechanics for Nanoelectronics			Quantum and solid state physics (Scholz) (3/1/0/0/0)	7

NES-12 10 20	Communication Networks 3			Communication Networks 3 (Fitzek) (3/0/0/0/0) <i>CN-Actual Topics-Problem based learning</i> (Fitzek)(1/2/0/0/0)	7
NES-ET-E-ComLS-23	Computational Laser Systems			Digital holography and image processing (Czarske) (1/1/0/0/0) <i>Biomedical Laser Systems and Optogenetics</i> (Czarske) (2/0/0/0/0)	5
NES-12 08 01-20.1	Future Computing Strategies in Nanoelectronic Systems			Future Computing Strategies in Nanoelectronic Systems (Tetzlaff) (2/1/0/0/0)	4
NES-E-JCAS	Joint Communications and Sensing Systems for 6G Networks			Joint Communications and Sensing Systems for 6G Networks (Dokhanchi) (2/2/0/0/0)	5
NES-11 06 07-14.1	Ubiquitous Systems			Distributed Systems (Schill) (2/2/0/0/0) <i>Mobile Communication and mobile computing</i> (Schill) (2/0/0/0/0)	7
NES-12 12 04-14.1	Electromechanical Networks			Electromechanical Networks (Marschner) (2/1/0/0/0)	4
NES-INF-E-FCPL	Foundations of Certified Programming Language and Compiler Design			Foundations of Certified Programming Language and Compiler Design (Ertel) (2/2/0/0/0)	6
NES-11 20 20	Hardware Modelling and Simulation			Hardware Modelling and Simulation (Göhringer) (2/2/0/0/0)	6
NES-12 08 04-14.1	Integrated Circuits for Broadband Optical Communications			Integrated Circuits for Broadband Optical Communications (Ellinger) (3/1/0/0/2)	7
NES-12 10 06-14.1	Integrated Photonic Devices for Communications and Signal Processing			Integrated Photonic Devices for Communications and Signal Processing (Jamshidi) (4/0/0/0/2)	7
INF-DSE-20-E-EHS-L	Lab Embedded Hardware Systems Design			Lab Embedded Hardware Systems Design (Kumar) (0/0/0/0/4)	6

Last updated: 21st August, 2023

- L Lecture
- E Exercise
- Se Seminar
- La Language course
- P Practical lab course

Key areas:

Technology

Design

Applications